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DUMPING CARS FOR COAL PITS

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At present, dumping cars of different types are in use in USSR coal pits. It is possible to utilize them at full capacity and achieve their planned efficiency only when the weight of materials transported corresponds to the capacity of the car. For standard-gauge dumping cars, the weight carried per unit of car-body capacity varies between narrow margins. This makes it possible to divide the cars into three groups depending on the ratio of the transported rock weight to the car capacity: 1.2-1.3 tons weight per cubic meter of car capacity for light rock, 1.4-1.5 tons per cubic meter of car capacity for medium rock, and 1.6-1.7 tons per cubic meter of car capacity for heavy rock.

The dumping cars include pneumatic side-dump cars, pneumatic end-dump cars, and hand-operated end-dump cars. The first type is manufactured by the Sormovo Plant, the Plant imeni Uritskiy, and the Kaliningrad Plant; the second by the Magor Company and the Plant imeni Pravda; the third by Toretak and Kalinin plants. The weight carried per unit of body capacity is less for side-dump cars than for end-dump cars. The actual capacity of the dumping car does not always correspond to its nominal one. One type of Magor Company dumping car with a nominal capacity of 40 tons, when loaded with medium heavy rock for which it is intended, can take only 28-30 tons. A dumping car put out by the Plant imeni Pravda with a load capacity of 60 tons and a body capacity of 32.3 cubic meters, also intended for medium heavy rock, can carry heavy rock because of its sturdy structure, i.e., it can withstand 2 tons per cubic meter.

The capacity of a dumping car should be at least four or five times that of an excavator bucket. There will soon be in use in coal pits excavators with a capacity of 4-5 cubic meters. Therefore, the capacity of standard-gauge dumping cars should not be less than 20-25 cubic meters.

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The side-dump car is better for the transport of wet rock because it is subject to more vibration during the dumping process. The end-dump car is better for dry rock.

Starting in 1946, end-dump cars were drawn by Series E locomotives which were equipped with two air compressors. The Sormovo Plant cars were drawn by Series R and RT locomotives which were equipped with one air compressor.

If the railroad over which these cars pass has the maximum number of ties (2,080 per kilometer), the pressure on the ties will be decreased.

The following specifications are recommended in connection with the designing of new dumping cars and the organization of their production.

	<u>Side-Dump Cars</u>	<u>End-Dump Cars</u>
Load capacity (tons)	40	45
Car body capacity (cu m)	20-22	23-24
Wt of load carried (tons)	28-30	33-35
No of axles	4	4
Load on axle (tons)	17-17.5	19.5-20

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